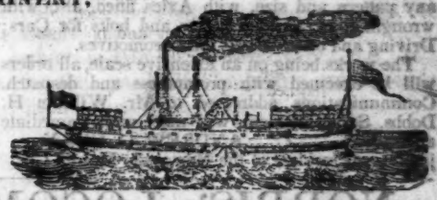
AMERICAN RAILROAD JOURNAL,
AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY, AND MINES.



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THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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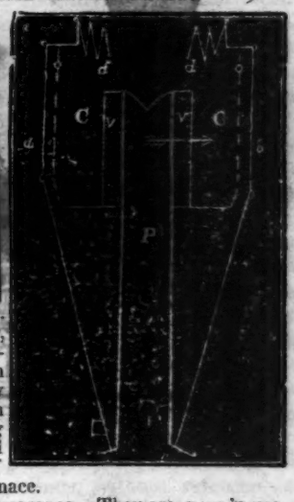
FRENCH AND BAIRD'S PATENT SPARK ARRESTER



TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

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Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

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W. Mc. C. CUSHMAN, *Civil Engineer*,
Albany, N. Y.

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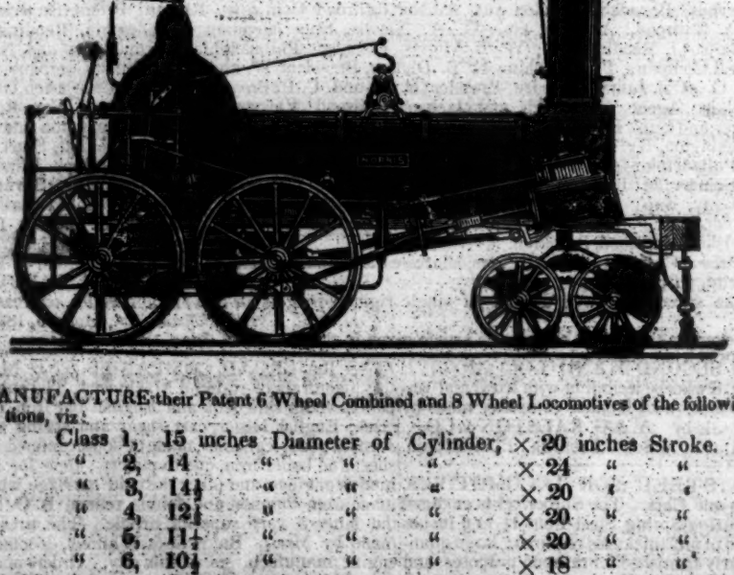

MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15	inches	Diameter	of	Cylinder,	× 20	inches Stroke.
"	2,	14	"	"	"	"	× 24	" "
"	3,	14½	"	"	"	"	× 20	" "
"	4,	12½	"	"	"	"	× 20	" "
"	5,	11½	"	"	"	"	× 20	" "
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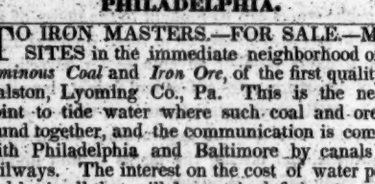

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TO IRON MASTERS.—FOR SALE.—MILL SITES in the immediate neighborhood of *Bituminous Coal* and *Iron Ore*, of the first quality, at Ralston, Lyoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years; the coal will not cost more than $1 to $1 25 at the mill sites, without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together, these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia, or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.

W. R. CASEY, *Civil Engineer*,

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containiug 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

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RAILWAYS IN SCOTLAND.

We give from Herapath's Railway Journal the following "Report of the Railway Department of the Board of Trade, on the Schemes for extending railway communication in Scotland."

(Continued from page 308.)

The leading public objects which it appears to us to be important to keep in view, are,

1. The traffic of Glasgow (including the district of which it is the centre) with Liverpool, Manchester, London and the rest of England.

2. The traffic of Scotland, north of the Forth and Clyde, with same places.

3. The traffic of Edinburgh (and its district) with Liverpool, Manchester, and the west of England (the traffic with London and the east of England being assumed to be sufficiently provided for by the east coast line.)

4 The traffic of Edinburgh and the east of Scotland with Dumfries and the south-west.

5. The local accommodation of the southern counties of Scotland are already provided with railway communication by the Berwick line.

Assuming, for the sake of comgarison, each system to be carried out completely, the advantages would appear to be divided.

For the first of the above objects, viz., the connection of Glasgow with England, the Caledonian system is preferable, as giving a shorter line by 23 miles.

In order to obtain this diminution of distance, the Caledonian line, however, has to pass the range of hills which runs across the south of Scotland at a higher level than the Dumfries line, and to attain the requisite elevation by gradients of great severity.—It becomes, necessary, therefore, to examine the nature of these gradients more in detail, in order to ascertain how far the advantages of the Caledonian, as a trunk line, in actual distance, may be neutralized by the character of its inclinations.

The principal ascent on the Caledonian line, is on the south side of the range. From Beattock to the summit of the Clyde pass, the ascent in 13 miles 77 chains is 760 feet, or at an average inclination of 1 in 97, which is surmounted by the following gradients:—

		Miles.	Chains.
1 in 200	for	4	5
1 " 100	"	1	70
1 " 80	"	2	40
1 " 75	"	5	42

On the rest of the line, the gradients, though in parts rather severe, are not of an extraordinary character, having nothing steeper than 1 in 100.

On the Dumfries line, the steepest gradient is 1 in 100; but at this inclination there is a continued plane of four miles; and for 16 miles together, in rising from Kilmarnock to the summit, the average inclination is 1 in 154. Upon both lines the curves are unexceptionable.

The question of gradients enters so materially into a comparison of these lines, that we think it right to subjoin the following passage from one of our previous reports, in which our views upon the subject are fully stated:

"*Gradients.*—As the question of gradients and curves enters as an important element into the consideration of these and many other schemes, it may be well that we should here state the views by which we have been guided in forming a judgment.

"Discarding all merely theoretical considerations, we have approached the subject in a practical point of view, referring to the actual experience of existing railways as the sole test of what is admissible in regard to future ones.

"And first, in regard to gradients.

"The improvements that have taken place in the construction of the locomotive engine have greatly enlarged the standard of its capabilities. Not many years ago, any thing steeper than 1 in 200 was looked upon as a decidedly objectionable feature in a line, and enormous expense was incurred in avoiding gradients of steeper inclination.

"The difference of expense in construction between a line with first class gradients, as it was called, i. e., none steeper than 1 in 200, and one with second class gradients ranging up to 1 in 100, was frequently not less than £10,000, £20,000, or even £30,000 per mile. The London and Birmingham, Great Western, and Brighton lines, for instance, averaging above £50,000 per mile, while the Grand Junction and London and South Western did not exceed from £20,000 to £25,000. Experience has fully proved that no saving, either in time or economy of working, has been attained at all commensurate to this enormous additional outlay of capital. Indeed, in many cases, cheaply constructed lines have been worked at an equal or less expenditure for locomotive power, and at as high an average velocity as lines constructed at twice the expense.

"This is so universally admitted, that such gradients as were formerly thought objectionable are now adopted every day as a matter of course, and as the capabilities of the locomotive have been enlarged, gradients of a class which would have been considered a few years ago altogether impracticable, have come into general use.

"It is important to ascertain, by reference to actual practice, the results which have been already arrived at, and which must be taken as starting points to guide us in the consideration of any new scheme.

"The Lickey incline on the Birmingham and Gloucester railway is a conclusive proof that a gradient of 1 in 37½ for a length of 2 miles 3 chains, may be worked by the aid of an engine constructed for the purpose, without serious inconvenience to an extensive traffic. It is also a proof that such an incline may descend without danger by the force of gravity, regulated by the action of breaks.

"The Sutton incline, of 1 in 88, on the Liverpool and Manchester railway, is surmounted by the ordinary trains of that railway, whose traffic is of a very heavy description, with a single locomotive engine.

"On the Newcastle and Carlisle line, an incline of 1 in 106 for 4 miles consecutively, is surmounted by the ordinary trains without difficulty or delay.

"The use of a stationary engine for ascending the incline on the Manchester and Leeds railway from the Victoria station, which is 1 in 59 for 1000 yards, and 1 in 49 for 640 yards, has been in a great measure discontinued, the ordinary enginnes being found capable of taking up it heavy passenger and goods trains of not less than 80 tons weight.

"On the Edinburgh and Glasgow railway, stationary power has likewise been discontinued, the locomotive engine being found a more efficient and economical substitute on the Glasgow incline of 1 in 42 for 1¼ miles; and recently, the locomotive engine has been equally substituted for stationary power upon the inclined plane of the London and Birmingham railway, from the Euston-square terminus to Camden-town, parts of which are at 1 in 66 and 1 in 75.

"Many other facts of a similar nature might be quoted, but the above seem quite sufficient to establish the general proposition:—

"1. That gradients of from 1 in 50 to 1 in 100, are perfectly practicable to the ordinary locomotive engine, with moderate loads.

"2. That gradients up to 1 in 37½, or higher, may be surmounted by heavy trains, with the aid of an assistant engine of peculiar construction.

"The application of these facts requires much discrimination. Nothing can be more fallacious than a mere comparison of gradients upon two lines, without reference to their peculiar circumstances.

"In the first place, the distribution of the gradients is a fact often of much more importance than their absolute inclination.

"A line of an undulating character, with steep but short gradients, alternately rising and falling, may be often worked at as much advantage as one where the inclines although less steep, are of greater continuance. On the other hand, where the inclination of the line is concentrated upon one or two gradients of such length and severity that assistant power is required at any rate, it may be comparatively unimportant whether such gradients are a few feet in the mile more or less. In this way, lines which have gradients of 1 in 70, or 1 in 80, distributed over them in short lengths, may be positively better lines, i. e., more susceptible of cheap and expeditious working, than others which have nothing steeper than 1 in 100, or 1 in 120.

"Another important consideration with reference to gradients is the nature of the traffic. It may be conceded, that, although gradients of 1 in 50 or 1 in 100, may be perfectly surmountable by the locomotive engine, they involve a certain loss of power as compared to lines of less inclination.

"Where the traffic is of such a heavy nature, that the full, or nearly the full power of the locomotive engine is rendered available with the ordinary trains, any increase in the inclination must require extra power and extra expense—and, therefore, up to a certain point, increased original outlay in improving gradients may become productive of eventual economy; also, where high speed and great punctuality are very important, as upon a long line, forming a link in a very extended communication, good gradients, if attainable at any moderate outlay, may be very desirable. But in the ordinary circumstances of a line dependent not so much on a heavy through traffic, which can be concentrated upon a few trains a day, as upon a local traffic, requiring frequent and light trains stopping at numerous stations, it appears perfectly well established that, in a commercial point of view, it is unwise to enlarge, beyond a certain point, the original outlay for the sake of arriving at perfection in gradients. Such a small proportion only of the total cost of working is dependent, under such circumstances, upon gradients, that the interest upon any considerable additional outlay is far more than equivalent to any possible saving in working expenses. The interest upon the extra cost of construction, occasioned by a slight improvement in gradients, would often be sufficient to defray, not merely the additional, but the total cost of locomotive power upon the line of inferior gradients.

"Experience seems also to establish that, under these circumstances, i. e., of a large local traffic, with frequent trains, light loads and numerous stoppages, the traffic may be conducted not only with far greater economy to the company, but also without loss of speed or other inconvenience to the public. A remarkable instance of this is afforded by the working of the traffic between Oldham and Manchester, which has to pass over inclines of 1 in 59, 1 in 48, and 1 in 27 for two miles—the whole distance being seven miles, and the gradient for the remaining five miles 1 in 150. Ten trains are run each way, carrying, on the average, 1,200 passengers, and 300 tons of goods per day, at an average speed of 22 miles per hour. The working of the North Union, Newcastle and Carlisle, and other lines, also affords a proof that, with light trains, the effect of steep gradients on speed is very limited. The experience of the cases above quoted appears also sufficient to show that gradients ranging from 1 in 100 up to 1 in 50, or even a higher inclination, may be worked under ordinary circumstances with perfect safety."

To apply these views to the case before us: it is evident that the long ascent on the Caledonian line, of fourteen miles, at an average inclination of 1 in 97, cannot be considered as impracticable. It would, however, require in most cases the aid of an assistant engine, in order to ensure the passing of trains with tolerable speed and punctuality. This would involve some expense as compared with a line capable of being worked without such assistant power, and also some loss of time, since the ascent, even with the aid of an assistant engine, could not be expected to be surmounted at the average speed upon a moderate gradient, nor could the whole time lost in the ascent be regained in descending on the other side.

The comparison, however, does not lie between this portion of the Caledonian railway and a line nearly level, for the Dumfries line has, as we have seen, an ascent of 16 miles, at an average inclination of 1 in 154, of which one plane of four miles is at 1 in 100.

It is probable that the use of assistant power would be required to enable trains to surmount it with tolerable speed and punctuality, and would equally involve some expense and loss of time, as compared with a level line.

On the whole, therefore, after a careful comparison of the gradients of the two lines, we do not think that, supposing passenger trains of the ordinary weight, drawn by powerful engines of the most improved construction, and assisted in each case up the long ascents by assistant engines, to run over them from end to end, the difference in the time of performing the journey would be so much affected by the gradients as to neutralize much of the advantage of the Caledonian line in respect of actual distance. Neither do we think that the difference in working expense would be so great as to induce the shorter line to charge the public a higher rate of mileage than would be charged upon the other line under ordinary circumstances. This being the case, we have to repeat our opinion, that, for the first of the objects above enumerated, viz., of supplying a trunk line of communication for Glasgow southwards, the Caledonian line is decidedly preferable.

For the second object, viz., the traffic of the north of Scotland with England, the Caledonian is still more decidedly superior. By its junction with the Scottish central line, at Castle Cary, it reduces the distance for all traffic from that point to Carlisle to 105¾ miles, while, from the same point, the distance by way of Glasgow and Dumfries, would be 144 miles. This assumes, moreover, the railway communication to be completed by the construction of the Glasgow junction line, which is strongly opposed on grounds of local and private interest. In the event of this line being rejected, the "Dumfries line would fail in providing an unbroken railway communication for the north of Scotland, since the Clyde would intervene between the proposed railways."

For the third and fourth objects, viz., of affording a communication between Edinburgh and the west of England and south west of Scotland, the Caledonian is also superior. The distance by it from Edinburgh to Carlisle is 100 miles, while by the proposed Hawick line it would be about 97; but the latter is a much worse line in respect of curves and gradients, and is only proposed at present as a single line. In fact, the proposed line between Edinburgh and Hawick, for which alone plans and sections are deposited, is not of a character which could be readily sanctioned as an important passenger line, when one of a better description is to be got.

As between Edinburgh and Dumfries, the Caledonian scheme affords a line of 84 miles, while the rival system would only afford a circuitous line by way of Glasgow of 141 miles in length, and depending for an unbroken communication on the construction of the Glasgow junction line, or a line very circuitous by Carlisle.

On the other hand, for the fifth object, viz., of local accommodation to the southern counties of Scotland, the Dumfries and Hawick scheme appears preferable to the Caledonian.

By the Dumfries line the county of Ayr is accommodated, which is entirely left out by the Caledonian scheme; Paisley and the county of Renfew are about equally situated, in respect of distance, to England by the two schemes; but being placed in the through line of communication by the Dumfries line are, probably, on the whole better accommodated by it. Dumfries-shire, although much worse accommodated in respect of connection with Edinburgh, is more directly traversed by the Dumfries line, and gains in distance to England and Glasgow. It is, therefore, also, on the whole, probably interested in the success of that line, as also, to a slight extent, the adjoining counties of Kirkcudbright and Wigton.

The counties of Roxburgh and Selkirk including the manufacturing district of Hawick and Galashiels, are decidedly interested in the success of the Hawick line, which alone proposes to afford them any accommodation.

On the one hand, the Caledonian line, for about 33 miles of its course from the fork, near Lanark, to Beattock, traverses a district singularly sterile and destitute of population; and, although the northern portion of the line will be of considerable local benefit to the important county of Lanark, and by opening up a rich coal field in the vicinity of Wilsontown, will be of great use in affording a supply of that article, and more especially of a particular description of it used in the making of gas; yet, considered as mere local lines for the accommodation of the southern counties, it appears to us that the Caledonian would be productive of less benefit than the two lines of the Dumfries and Hawick scheme.

We are, therefore, brought to consider whether the larger interests and greater amount of population are benefitted by the superior advantages of the Caledonian, or by those of the Dumfries and Hawick system. Trying it by this test, we find that—

	Population.
Ayr . . .	164,356
Roxburgh . .	46,025
Selkirk, . .	7,990
	218,371

have a strong interest in the adoption of the Dumfries and Hawick in preference to the Caledonian scheme.

Also—

	Population.
Renfew, . .	155,072
Dumfries, . .	72,832
Kirkcudbright, .	41,119
Wigton, . .	39,195
	308,218

On the other hand—

Lanark, . . .	423,972

and all Scotland north of the Forth and Clyde, (except, perhaps, Fife,) containing a population of 1,200,000, have a decided interest in the adoption of the Caledonian line.

Also, Edinburgh and the adjacent district, population about 250,000, have a decided, although not as strong an interest the same way, being already supplied by the east coast line.

We can have no hesitation, therefore, in arriving at the conclusion that, on the whole, a decided preponderance of advantage to Scotland is afforded by the Caledonian scheme in connection with the Scottish central, as giving better trunk communication for all the most important streams of traffic; and we have consequently to report our opinion, that it deserves, on public grounds, a preference over the competing scheme.

We are fortified in this opinion by the consideration, that the minor local benefits of the competing scheme will probably be attained by the gradual extension of branches in connection with other lines, although they may be now postponed in order to secure the best trunk line for the country at large; whereas, if an inferior trunk line be sanctioned for the sake of minor local advantages, it may not be so easy to obtain an improved one afterwards.

Having arrived at the conclusion that the Caledonian scheme is preferable, on public grounds, we have now to enquire how far this conclusion may be affected by considerations of expense, and whether the scheme is likely to sustain itself as a solvent commercial undertaking.

As compared with the rival scheme, we have seen that the Caledonian involves the construction of about 137 miles of new railway as against 178.

An examination of the different plans and sections will show that the Caledonian line is, on the whole, of a less difficult and expensive character than the Dumfries line; while the Hawick line would be still more expensive to construct, as a good double line for an important passenger traffic. The Glasgow junction, which is required to complete this system, would also be a very expensive work, being carried partly by a tunnel below the town of Glasgow, and partly by arches across the streets and the Clyde.

On the whole, therefore, the cost of construction of the Dumfries and Hawick system could not fail to be much higher than of the Caledonian; and it would require, including existing lines, about 240 miles of railway to be worked as against 170 by the Caledonian system, in order to accommodate the same principal streams of traffic.

Admitting, as we have, that the Dumfries and Hawick scheme would afford greater local accommodation to the southern counties, and therefore command greater local traffic, we are not of opinion that this additional local traffic could be at all sufficient to compensate for the additional cost of construction and working; and, therefore, we think that if any scheme for connecting Scotland with England, in addition to the line by the east coast, can support itself, the Caledonian is most likely to do so. Upon this point, we are aware that the commissioners who reported in 1841, on the best mode of effecting railway communications between England and Scotland, while giving a decided preference to the Caledonian route for national purposes, expressed a somewhat unfavorable opinion; and we think it very probable that, under the circumstances, and upon the evidence then before them, that opinion was a sound and judicious one. Considerable changes have, however, taken place since that period. A much greater degree of economy has been introduced in the construction of railways than the commissioners would have been warranted in assuming; the cost of working, also, has been considerably reduced; and, owing to the improvement of the locomotive engine, steep gradients have ceased to be regarded as such a formidable source of expense.—The continuation of the western line from Lancaster to Carlisle, and the support given by the western companies to the Caledonian line, also place that line on a much more secure footing than it held when considered by the commissioners.

The traffic tables, which have been prepared with much care, show an ample return on the estimated capital; and, although these estimates must always be, to a considerable extent, uncertain, especially where—as in the present case, they depend a good deal on speculative sources of income, such as the diversion of passengers and merchandise from steamboats and other existing modes of water communication; yet still, on the whole, having regard to the above circumstances, we see no sufficient reason why the Caledonian line, if constructed with due regard to economy, may not be able to support itself as a fair commercial undertaking; and certainly no such decided reasons to the contrary, as should induce us to recommend that the sanction of the legislature should be withheld from a line of so much national importance.

We directed our attention very particularly to the Edinburgh branch of the Caledonian scheme, with a view to ascertain whether it promised a sufficient return to be a support rather than a burden to the main undertaking; and also whether the construction of an unnecessary line might not be saved if this branch were made to join the existing Edinburgh and Glasgow line, instead of entering Edinburgh independently. It appeared to us, however, that owing to the difference of levels, this latter object could not be attained without great difficulty, while the advantages of the separate entrance into Edinburgh, and separate terminus there proposed by the Caledonian scheme were represented to be considerable; and as regards the branch generally, we were satisfied that it was likely to bring a large accession of traffic and to afford much public advantage, more especially from the supply of coals which it would furnish to all the towns and districts adjacent to the main line.

On the whole, therefore, we have arrived at the conclusion that the Caledonian scheme in its integrity appears to us, on public grounds, to be deserving of preference.

This, as we have already stated, appears to us to involve the rejection of the Glasgow, Dumfries, and Carlisle line, and also of any scheme from Edinburgh to Carlisle, proposed as a competing scheme, to the Caledonian. The Edinburgh and Hawick line, however, considered simply as a local line for the accommodation of the district, does not fall within this description. It will unquestionably afford considerable local advantage to the district traversed, including the towns of Hawick and Galashiels, which are the seats of a thriving woollen manufacture. The benefit conferred on all this district will be great, by lowering the price of coals, which are now carted at a heavy expense from the vicinity of Dalkeith, and by affording a communication with Edinburgh. If constructed cheaply, the traffic may be sufficient to afford a moderate remuneration to the North British Company, by whom it is undertaken, and of whose Dalkeith line it will be a feeder; and although this is a point which we should have wished to investigate more fully, if we could have commanded the requisite time and evidence, and to which we beg to direct the attention of the committee on the bill, we do not, as at present advised, see any sufficient reasons to the contrary to induce us to report an opinion adverse to the measure, upon public grounds.

There are some facts connected with the experience of existing railways in Scotland which would make us hesitate in concluding that railways, if constructed with economy, may not be supported even in localities where the existing traffic appears insufficient for that purpose.

Between Arbroath and Forfar there was no public conveyance previous to the formation of the railway; the population of these towns is only 8,707 and 9,620 respectively; there are only a few small intermediate villages, and the traffic in the direction of the line was quite inconsiderable. Now, there are 90,000 passengers, in the course of the year, conveyed by the railway, and its receipts average from £150 to £200 per week. The Dundee and Arbroath railway, likewise, has created a considerable traffic; and although only 17 miles in length, and, therefore, too short to be worked with advantage as an independent line, is in a prosperous condition, paying a dividend of from 5 to 6 per cent.

(For conclusion, see page 332.)

ENGLISH RAILROAD SHARE-LIST.

NAME OF RAILWAY.	Miles opened.	Total sums, in pounds, authorized to be raised by shares.	Total sums, in pounds, authorized to be raised by loan or mortgage.	Total sums, in pounds, expended as per last balance sheets.	Cost of working, in pounds, for six months, as stated in latest balance sheets.	Total earnings, in pounds, for six months, as stated in latest balance sheets.	Dividend at last meeting. Per share. £ s. d.	Dividend at last meeting. Per cent. per annum. £ s. d.	Paid on share.	Value of share.
Arbroath and Forfar	15	102,000	35,000	138,879			0 12 6	2 10 0	25	27
Birmingham and Gloucester	55	1,187,500	407,336	1,500,806	39,251	53,203	1 5 0	2 10 0	100	100
Brandling Junction	23	161,700	365,470	461,452				4 10 0	50	54
Bristol and Gloucester	37½	400,000	211,000					nihil.	30	36
Chester and Birkenhead	14½	750,000	143,170	518,980	5,856	13,148	0 8 6	1 14 0	50	32
Dublin and Drogheda	31	450,000	150,000	500,869				nihil.	55	72
Dublin and Kingston	6	200,000	152,200	359,000			6 0 0	5 0 0	100	166
Dundee and Arbroath	16½	100,000	49,445	153,416	2,989	6,993	1 5 0	5 0 0	25	29
Durham and Sunderland	18½	169,350	124,055	270,392	9,889	17,702		nihil.	34	29
East County and North and East	86½	4,443,200	1,341,155	3,931,909	47,385	118,726	1 6 6		45	57
Edinburg and Glasgow	46	1,125,000	375,000	1,649,523	29,429	55,866	1 2 6	4 10 0	50	57
Glasgow, Paisley and Ayr	51	937,500		1,066,951	12,446	36,736	1 2 6	4 10 0	50	60
Glasgow, Paisley and Greenock	22½	650,000	216,666	787,884	11,572	23,177	0 5 0	2 0 0	25	12
Grand Junction	104	2,478,712		2,453,169	84,309	195,080	5 0 0	10 0 0	100	210
Great North of England	45	969,000	581,017	1,262,518	12,201	36,189	1 12 6	3 5 0	100	119
Great Western	221½	4,650,000	3,679,343	7,272,939	132,235	369,904	3 10 0	7 0 0	75	138
Hartlepool	15½	438,000	155,540	719,205				8 0 0	100	
Leicester and Swannington	16½	140,000		140,000	2,207	6,317	1 5 0	5 0 0	50	
Liverpool and Manchester	32	1,209,000	497,750	1,739,835	57,239	117,559	5 0 0	10 0 0	100	203
Llanelly	27	200,000	44,000	221,624			1 0 0	2 0 0	87	
London and Birmingham	12½	6,874,976	1,928,845	6,393,468	92,823	405,768		10 0 0	100	218
London and Blackwall	3½	804,000	266,000	1,315,640	15,978	23,870			16	6
London and Brighton	56	1,793,800	998,350	2,630,451	29,372	84,880	0 12 0	2 8 0	50	47
London and Croyden	8½	550,000	229,000	761,886	7,583	10,545	0 5 0	2 10 0	14	17
London and Greenwich	3½	759,383	233,300	1,040,930	15,193	28,933		nihil.	13	10
London and South Western	92½	2,222,100	630,100	2,596,291	68,457	150,469	1 12 6	6 10 0	41	73
Manchester and Birmingham	31	2,100,000	690,586	1,923,699	15,397	58,162	1 0 6	5 0 0	40	48
Manchester and Bolton	10	778,100	197,730	773,743	8,565	21,140	2 2 0	4 10 0	93	110
Manchester and Leeds and Hull	81	2,937,500	1,943,932	3,921,593	46,653	156,761		7l. a 10l.	60	88
Midland railway	178½	5,158,900	1,749,630	6,279,056	76,983	281,898			100	96
Newcastle and Carlisle	61	878,240	188,563	1,135,069	26,499	73,947	4 0 0	4 0 0	100	105
Newcastle and Darlington	23	560,000		405,728				nihil.	21	49
Newcastle and North Shields	7	150,000	153,876	309,629	8,943	18,466		2 0 0	50	37
North Union	39	739,201	308,306	1,015,447	9,071	37,794	2 10 0	6 16 8	100	104
Paris and Orleans	82	1,600,000	400,000	1,978,415			0 16 0	8 0 0	20	39
Paris and Rouen	84	1,440,000			31,247	91,171		8 0 0	20	38
Preston and Wyre	19	830,000	179,852	355,161	4,191	7,066		nihil.	50	18
Sheffield and Manchester	19	1,150,000	311,759	951,455	11,895	14,876		nihil.	82	93
South Eastern	88	2,996,000	1,530,277	3,464,172	40,993	81,482	0 10 6	2 2 0	50	39
Taff Vale	30	465,000	154,785	590,006	8,509	18,414	1 0 0	6 5 0	100	55
Ulster	25	519,150	20,000	348,626	5,401	13,856	0 15 0	5 1 8	29	37
Yarmouth and Norwich	20½	187,500	62,500	230,250				nihil.	16	25
York and N. Mid. and Leeds and Selby	28	1,062,500	167,500	676,644	27,132	55,752	2 10 0	10 0 0	50	100

NEW AND PROPOSED RAILWAYS.	Share Capital.
Aberdeen	1,600,000
Barnsley Junction	200,000
Belfast and Ballymena	385,000
Blackburn and Accrington	400,000
Birk. and Ches. Junction	1,000,000
Bolt., Wigan and Liverpool	800,000
Caledonian	1,800,000
Cambridge and Lincoln	1,250,000
Chatham and Portsmouth	5,000,000
Chester and Wrexham	120,000
Churnet valley	1,800,000
Direct Northern to York	4,000,000
Dublin and Belfast	960,000
Dundee and Perth	250,000
Edinburg and Northern	800,000
Ely and Bedford	270,000
Glosgow, Dum. & Carlisle	1,300,000
Gt. South and West Ext.	1,200,000
Gt. Grimsby and Sheffield	600,000
Harwich and E. coun. Jun.	160,000
Huddersfield & M. rl. & cl.	600,000
Kendal and Windermere	125,000
Leeds and Dewsbury	400,000
Leeds and Thirsk	800,000
Liv. Ormskirk and Preston	600,000
London and Portsmouth	1,750,000
London and York	5,000,000
Londonderry & Enniskillen	500,000
Lynn and Ely	200,000
Manchester, Bury and Ross	300,000
Manchester and Buxton	250,000
Mullingar and Athlone	
Newcastle and Berwick	700,000
Richmond & W. End Junc.	
Scottish Central	700,000
Sheffield and Lincolnshire	650,000
Shrewsbury and Gd. Junc.	400,000
Shrew. Wolv. Dudly & B.	900,000
Trent Valley	900,000
West London Extension	64,000
West Yorkshire	1,000,000
Whitehaven and Maryport	100,000
FRENCH RAILWAYS.	
Boulogne and Amiens	1,500,000
Central of France	1,280,000
Lyons and Avignon	2,400,000
Orleans, Tours & Bordeaux	2,000,000
Paris and Lyons	2,500,000
Paris and Orleans	1,600,000
Paris and Rouen	1,400,000

Steam and Miscellaneous.

NAME OF COMPANY.	Num. of shares.	Am't. of share.	Amount paid.	Div. p c. per ann.	Last price.	Present price.
Anglo Mexican Mint	10,000	10	10		15½	15½
Anti Dry Rot	10,000		18½		2	
Australian Trust Company	5,700	100	35		34½	
General steam Navigation	20,000	15	14	10	27½	27
Gt Western Steam Pa			100		25	
Metropolitan Wood Pav	15,000	10	6	5	6½	
Patent Elastic Pav	10,000	1	1	5	1½	
Peninsular and Oriental	11,493	50	50	7	64½	65
Ditto	3,200	50	40	7		
Polytechnic Institution				6		
Reversionary Int. Soc	5,3[illegible]	100	100	4½	104	104
R. Mail Steam Packet	15,000	100	60		36½	37
South Western Steam	4,000	25	5			
Ship Owners' Towing	3,000	10	7½	10	15	
Thames Tunnel	4,000	50	50			
University College	1,500	100	100			
Canals.						
Ashby de la Zouch	1,432	113	av.	4	70	70
Barnsley	720	100	100	14	180	180
Birmingham, 1-16 share	3,000	118½	79	10	150	160
Do. and Liverpool Junction	4,000	160	100		13½	13½
Coventry	500	100	100	20	365	365
Cromford	460	do.	do.	24	250	250
Derby	600	do.	do.	9	105	105
Erewash	231	do.	do.	32	440	440
Forth and Clyde	1,297	400½	40½	4	440	440
Grand Junction	11,600	100	100	7	162	161½
Grand Surrey	1,500	do.	do.		20	
Gloucester and Berkley	5,000	do.	do.		8	8
Grantham	749	150	150	8	185	185
Lancaster	11,699	47½	47½	3	40	40
Leeds and Liverpool	2,897	100	100	34	640	640
Leicester	545	14	140	9	139	139

NAME OF COMPANY.	Num. of shares.	Am't. of share	Amount paid.	Div. p.c. per am.	Last price.	Present price.
Loughborough	70	142½	142½	70	1140	
Monmouthseire	2,409	100	100	10	160	160
Melton Mowbray	250	100	100	10	117	117
Mersey and Irwell	500	100	100	10		
Macclesfield	3,000	100	100	2½	15	15
Neath	247	100	100	17	365	365
Oxford	1,786	100	100	30	505	
Regents or Loncon	21,418	33½	33½	2½	25	25
Shropshire	500	125	125	6	120	120
Somerset coal	800	150	150	7½	123	123
Stafford and Worcester	700	140	140	25	480	480
Shrewsbury	500	125	125	12	230	230
Stourbridge	300	145	145	14	360	360
Stroudwater	200	150	150	19		
Swansea	533	100	100	15	240	240
Severn & Why & Rail Av.	3,762	26½	26½	5½	30	30
Trent and Mersey	2,600	50	50	65	495	
Thames and Medway	8,149	19½	19½		10	10
Warwick and Birmingham	[illegible],000	100	100	10½	167	
Warwick and Napton	980	100	100	8½	122	
Water Works.						
Birmingham	4,800	25	25	3½	28	28
East London	4,433	100	100	8	223	225
Grand Junction	5,500	av.	41 2-3	7½	88	90
New River L. B. Ann	1,500			2½		
Manchester and Salford	6,486	av.	30	8½	57	57
Vauxhall, lt. S. London	1,000		100	5	55	55
West Middlesex	8,294	av.	63½	6½	126	127
Docks.						
Commercial Dock	1,065	100	100	3	80	
East and West India		sto.		5½	137	
London	3,238,310	sto.		4½	114½	115
St. Katharine	1,352,752	sto.		5	116	171
Southampton	7,000	50	50			

AMERICAN STATE WORKS AND CANALS, ETC.

		STATE WORKS.	Length in miles.	Cost.	1843. Income.	1843. Expend.	1844. Income.	1844. Expend.
N. Y.	1	Black river canal	35	1,524,967	.....	.....	.....	.....
"	2	Cayuga and Seneca	21	237,000	16,557	10,953	24,618	14,443
"	3	Champlain canal	64	1,251,604	102,308	.....	116,739	.....
"	4	Chemung	23	684,600	8,140	14,486	14,385	12,740
"	5	Chenango	97	2,420,000	16,195	15,967	22,179	15,960
"	6	Crooked lake	8	156,777	461	3,674	1,498	3,951
"	7	Erie—enlargement of	363	12,648,852	1,880,316	.....	.....	.....
"	8	Genessee valley	120	3,739,000	.....	.....	.....	.....
"	9	52 miles opened, cost $1,500,000	.....	.....	12,292	13,819	19,641	15,557
"	10	Oneida lake	6	50,000	225	2,239	621	1,636
"	11	Oswego	38	565,437	29,147	22,742	56,165	28,599
Pa.	12	Beaver division canal	25	.....	.....	.....	7,381	5,386
"	13	Delaware canal	60	.....	.....	.....	109,278	22,870
"	14	French creek	45	.....	.....	.....	.....	.....
"	15	Seneca river towing path	.....	69,276	.....	.....	381	.....
"	16	Columbia railroad	82	.....	.....	.....	443,336	205,067
"	17	Eastern division	36	.....	.....	.....	179,781	138,915
"	18	Juniata canal	93	.....	.....	.....	.....	.....
"	19	Portage railroad	130	.....	.....	.....	351,102	248,943
"	20	Western division canal	105	.....	.....	.....	.....	.....
"	21	North branch Susquehannah canal	73	.....	.....	.....	.....	.....
"	22	West " " " "	72	.....	.....	.....	101,949	57,633
Ohio	23	Hocking canal	56	975,130	4,757	.....	5,286	4,139
"	24	Miami canal	85	1,660,742	68,640	38,826	77,844	22,341
"	25	Miami extension	105	2,856,636	8,291	.....	12,723	14,741
"	26	Miami northern division	35	322,000	.....	.....	unfin'd.	.....
"	27	Muskingum	91	1,627,318	23,167	.....	29,385	15,027
"	28	Ohio	334	4,600,000	322,754	123,398	343,711	113,210
"	29	Wabash	91	3,028,340	35,922	6,400	48,589	12,817
"	30	Walhonding	25	607,269	838	39,005	1,977	1,238
"	31	Western road	31	255,015	7,254	1,782	8,747	2,929
Ind.	32	Sundry works	.....	11,000,000	.....	.....	.....	.....
"	33	Maume canal	.....	.....	.....	.....	.....	.....
Ill.	34	Sundry works	.....	10,000,000	.....	.....	.....	.....
Mich	35	Central railroad	110	1,842,308	149,987	75,950	211,170	89,420
"	36	Southern railroad	68	936,295	24,064	7,907	60,341	70,000

The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.

The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which *additional* sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are $2,000,000 and $600,000, making their total cost when finished $3,553,000 and $2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of $39,000 and $14,000 respectively.

The total receipts from the works of Pennsylvania for 1843 were $1,019,401; for 1844 $1,164,326; and the cost about 30 millions.

The receipts for 1844 were as follows:

Canal tolls,	578,404
Railroad tolls,	252,855
Motive power,	319,590
Trucks,	13,477

of which $585,920 is from 118 miles of railroad, and $578,404 from 550 miles of canal.

The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 $471,623, and in 1844 $515,393, the cost, 1st Jan. '43 being $15,577,233. The increase of '44 over '43 is only $43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known.

These 21 millions on sundry works yield no income whatever.

The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.

	CANALS.	Length in miles.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.
	Blackstone	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bald Eagle Navigation	25	400,000	.....	.....	.....	.....	.....	.....	.....
	Beaver and Sandy, (part)	.....	1,000,000	.....	.....	.....	.....	.....	.....	.....
	Charleston, (S. C.)	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Chesapeake and Ohio	184	12,370,470	47,637	.....	.....	.....	.....	.....	.....
	Conestota	12	300,000	.....	.....	.....	.....	.....	.....	.....
	Delaware and Chesapeake	13	.....	.....	.....	.....	.....	.....	.....	26
	Schuylkill	108	3,500,000	279,795	102,221	.....	190,693	126,624	.....	31
	Farmington	.....	.....	.....	.....	.....	.....	.....	.....	.....
	James river and Kenhawa	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Middlesex	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Port Deposit	10	200,000	.....	.....	.....	.....	.....	.....	.....
	Delaware and Raritan	43	2,900,000	99,623	53,327	.....	131,491	84,455	.....	.....
	Southwark	.....	300,000	.....	.....	.....	.....	.....	.....	.....
	Tide Water	45	2,900,000	.....	.....	.....	.....	.....	.....	.....
	Union	80	2,000,000	.....	.....	.....	.....	.....	.....	.....
	Morris	101	1,000,000	.....	.....	.....	.....	.....	.....	28
	Dismal Swamp	.....	.....	.....	.....	.....	.....	.....	.....	.....

REMARKS.

We may, perhaps, at some future time be enabled to give the particulars of all these canals.

The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income.

The enlargement of the Schuylkill canal has been commenced.

The Morris canal was lately sold for one million, about one-fourth of its cost. It is said in the papers that it is to be enlarged. We have seen no report, nor heard of the appointment of any engineer.

CANADIAN CANALS.	Length in miles.	No. of locks.	Lockage in feet.	Size of locks. Length of chamber.	Size of locks. Width.	Size of locks. Depth on mitre sill.	Width of canal. Bottom.	Width of canal. Surface.	Estimate.	Expended to Sept. 1843.	Income. 1843.	Income. 1844.
The Welland canal	.....	.....	.....	feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658	
Main trunk from Port Colborne to Port Dalhousie	28	31	328	150	26 1-2	8 1-2	45	81	.....	.....		
Junction branch to Dunville (not added below)	21	1	6	150	26 1-2	8 1-2	35	71	.....	.....		
Broad creek branch to Port Maitland (not added below)	1 1-2	1	6	200	45	9	45	85	.....	.....		
The St. Lawrence canal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Galops and Port Cardinal	2	2	7	200	45	9	50	90	.....	.....		
Rapid Plat	4	2	11 1-2	200	45	9	50	90	672,498	973		
Farren's point	3-4	1	3 1-2	200	45	9	50	90	.....	.....		
Cornwall, passing the Long Sault rapids	11 1-2	7	48	200	55	9	100	150	865,372	1,665,663		
Beauharnois, do. Coteau, Cedars and Cascades road	11 1-4	9	82 1-2	200	45	9	80	120	1,190,087	275,426		
Lachine, do. Lachine rapids	8 1-2	5	44 1-2	200	45	9	80	120	old canal	400,000	29,288	
Elargement of do.	.....	.....	.....	.....	.....	.....	.....	.....	1,001,333	64,439		
Total from lake Erie to the sea	12	57	525									
Chambly	66	9	74	120	24	6	36	60	200,000	440,000	1,409	

COAL COMPANIES.	Length in miles R. rd.	Length in miles Canals.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.
Delaware and Hudson	16	108	2,800,000	930,203	196,702	10	.....	.....	.....	130
Lehigh	20	72	6,000,000	.....	.....	.....	.....	.....	.....	31

REMARKS.

AMERICAN RAILROADS.

		RAILROADS.	Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Previous prices	SALES. Week ending April 6th. Shares.	Price
Me.	1	Portland, Saco and Portsmouth	50	1,200,000				89,997	47,166	7	124,497	74,841	6	113½		102
N. H.	2	Concord	35	750,000									12	70½		139½
Mass.	3	Boston and Maine	56	1,485,461				178,745	68,499	6	233,101	86,401	6½	110¼		112½
"	4	Boston and Maine extension	17 1-4	455,703	unfin.											
"	5	Boston and Lowell	26	1,863,746				277,315	144,000	8	316,909	147,615	8	120½		120
"	6	Boston and Providence	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	108½		109½
"	7	Boston and Worcester	44	2,914,078				4 0,141	162,000	6	428,437	195,163	7½	116½		117½
"	8	Berkshire	21	250,000	not stated				17,500	7	17,737					
"	9	Charlestown branch		280,260						13	34,654	13,971	5½	70½		82½
"	10	Eastern	54	2,388,631				279,563	140,595	6	337,238	227,920	8	109¼		109
"	11	Fitchburg	50	1,150,000	just opn'd						42,759	26,835		120		124
"	12	Nashua and Lowell	14 1-2	380,000				84,079		8	94,588	34,944	10	121		126½
"	13	New Bedford and Taunton	20	430,962				50,671	24,000	6	64,998	24,000	6			
"	14	Northampton and Springfield		172,883	unfin.											
"	15	Norwich and Worcester	59	2,170,366	900,000	16,535	100	162,336	24,871		230,674	99,464	3	70½		72
"	16	Old Colony		87,820	unfin.									102		104
"	17	Stoughton branch	4	63,075	unfin.											
"	18	Taunton branch	11	250,000					20,000	8	96,687	20,000	8	118		
"	19	Vermont and Massachusetts														
"	20	West Stockbridge	3	41,516	200		100						4			
"	21	Western, (117 miles in Mass.)	156	7,686,202	4,686,202	30,000		573,882	284,432		753,753	439,679	3	102½		101½
"	22	Worcester branch to Milbury		8,431	506											
"	23	Housatonic, (19 months,)	74	1,244,123							150,000			82		
Co n	24	Hartford and New Haven	38	1,100,000	100,000	10,000	100						6	89		94½
"	25	Hartford and Springfield	25 1-2	600,000	400,000	2,000	100									
"	26	Stonington, (year ending 1st Sept.)	48	2,600,000	650,000	13,000	100	113,889			154,724	79,845		41		39½
N.Y.	27	Attica and Buffalo	31	336,211				45,896	7,522		73,248	48,033	0			
"	28	Auburn and Rochester	78	1,796,342	200,000	14,000	100	169,693	112,000		237,667	152,007	6	106		
"	29	Auburn and Syracuse	26	766,657			133½	86,291	27,334		96,738	52,544	6	116		
"	30	Buffalo and Niagara	22	200,000		1,500								100		
"	31	Erie, (446 miles,)		5,000,000										31½		29
"	32	Erie, opened	53						48,000		126,020	59,075				
"	33	Harlem	26	1,206,231							140,685	62,399		70		72
"	34	Hudson and Berkshire	31	575,613			50				35,029	1,999	0	14		
"	35	Long Island	96	1,610,221	392,340	29,846					153,456	58,766	0	75½		76
"	36	Mohawk and Hudson	17	1,317,893	400,000	10,000	100	69,948	58,780		79,804	45, 3	0	64½		61
"	37	Saratoga and Schenectady	22	303,658				42,242	3,000	1	34,666	8,455	0			
"	38	Schenectady and Troy	20 1-2	640,800				28,043			32,646	6,365	0			
"	39	Syracuse and Utica	53	1,115,897	none.	16,000	62½	163,701	72,000		192,061	120,992	8	115		
"	40	Tonnawanda	43	727,332				76,227			114,177	75,865	5			
"	41	Troy and Greenbush	6	180,000												
"	42	Troy and Saratoga	25	475,801				44,325	21,000		38,502	9,971	2½			
"	43	Utica and Schenectady	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199'094	8	129		
N. J.	44	Camden and Amboy	61	3,200,000				682,832	383,880		784,191	494,956		110½		111
"	45	Elizabethtown and Somerville	26													
"	46	New Jersey	34	500,000										93½		
"	47	Paterson	16	2,000,000									6	85		
Pa.	48	Beaver Meadow	26	500,000												
"	49	Cumberland Valley	46	1,000,000												
"	50	Harrisburg and Lancaster	36	1,250,000										30		
"	51	Hazleton branch	10	860,000												
"	52	Little Schuylkill	29	120,000												
"	53	Blossburg and Corning	40	900,000												
"	54	Mauch Chunk	9	600,000												
"	55	Minehill and Schuylkill Haven	18	100,000						12				143½		
"	56	Norristown	20	315,000										6½		7
"	57	Philadelphia and Trenton	30	800,000										104		
"	58	Pottsville and Danville	29 1-2	400,000												
"	59	Reading	94	1,500,000	7,447,570	40,200	50				597,613	343,511		50½		49
"	60	Schuylkill valley	10	9,457,570												
"	61	Williamsport and Elmira	25	1,000,000				20,000								
"	62	Philadelphia and Baltimore	93	400,000				43,043	200,000			210,000		43½		42
Del.	63	Frenchtown	16	1,400,000												
Md.	64	Baltimore and Ohio, (1st Oct.)	188	600,000				575,235	279,402		558,620	346,946		48½		50½
"	65	Baltimore and Susquehanna	58	7,623,600										5		6
"	66	Baltimore and Washington	38	3,000,000				177,227	71,691		212,129	104,529		84		
Va.	67	Greensville and Roanoke	17 1-2	1,800,000												
"	68	Petersburg and Roanoke	60	260,000							122,871	72,898	3			
"	69	Portsmouth and Roanoke	78 1-2	969,880												
"	70	Richmond and Fredericksburg	61 1-2	850,000												
"	71	Richmond and Petersburg	22 1-2	1,200,000												
"	72	Winchester and Potomac	32	700,000												
N. C.	73	Raleigh and Gaston	84 1-2	500,000												
"	74	Wilmington and Raleigh	161	1,360,000												
S. C.	75	South Carolina	136	1,800,000		34,410	75				532,871	140,196	5			
"	76	Columbia	66	5,671,452				201,464	77,456		328,425	180,704				
Ga.	77	Central	190					227,532	93,190							
"	78	Georgia	147 1-2	2,581,723				248,026	158,207		248,096	147,523				
"	79	Montgomery and West Point	89	2,650,000	170,000		100				35,000	15,000				
Ky.	80	Lexington and Ohio	40	500,000												
Ohio	81	Little Miami	40	450,000												
"	82	Mad river	40	400,000												
Ind.	83	Madison and Indianapolis	56	152,000												
Can.	84	Champlain and St. Lawrence	15	212,000					12,000		58,000	24,000		110		

Correspondents will oblige us by sending in their communications by Monday morning at latest.

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AMERICAN RAILROAD JOURNAL.

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NEW YORK AND ERIE RAILROAD.

We congratulate the people of this city, the southern tier of counties, the "great west" and the company, upon the result of the legislative proceedings in relation to this important work. Although the legislature has but *partially* done its duty towards the people of the southern part of the State, in its legislation in relation to the New York and Erie railroad, yet they have done something; and now, if the people of this city, and along the line of the road, will but do *their* duty, and subscribe promptly the *three millions* of dollars required to secure the benefit of the recent legislation, we may, in a few years, enjoy all the benefits resulting to a city like this from an easy, cheap, rapid and uninterrupted communication with the interior.

It is to be hoped and presumed that the company will adopt energetic measures to obtain an early subscription to the stock of the company, and then to resume active operations on the work.

We have not yet received a copy of the law, which, we understand, relinquishes, on certain conditions, the lien of the State for its former loans, and cannot therefore speak understandingly in relation to it; especially as no two of the newspapers that we have seen agree in their notices of it; we believe, however, that the principal features are to relinquish the State lien for three millions, when the company shall have obtained subscriptions to an equal amount and have paid in and expended $750,000 on the work; and that when the $3,000,000 subscription shall have been paid up and expended on the work, then the company may issue their bonds for an equal amount, which shall be sold by the comptroller, and also expended upon the work. These bonds to be secured by the entire work, upon which over ten millions of dollars will have been expended, and the interest upon them to be paid to the comptroller. It also provides, we understand, that the present holders of old stock shall exchange it *two* shares for *one*.

The law is not what it should have been, yet it will ensure the completion of the road, and the rapid prosperity of this city, and the region through which it will pass, if the managers will set diligently to work, adopt judicious measures, and carry them rigidly into operation.

They will of course, we presume, concentrate their forces on the eastern portion of the line, and bring short sections successively into use, and thus make every mile as completed contribute its share of business to the whole line in use.

It has also occurred to us that they might with propriety unite with the *New York and Albany* company and build a road in common from this city, through the 8th avenue, and Westchester county, to a point where they must diverge from the line of the Albany road to connect at Piermont by a ferry. In this way these two lines from this city may be mutually beneficial to each other, and to the people. Let the people now come to the work with a *will*, and a determination to complete *both* roads in the shortest possible time, and they may rest assured that the real estate of this city will increase in value to an amount greater than it would otherwise do, more than the *entire* cost of both roads.

WESTERN RAILWAY AND THE READING.

A late visit to the depot of the Western road at East Albany, has presented an important fact in railway information, to wit, that iron in pigs, blooms and rolled, is transported by contract (to take it at the pleasure and convenience of the railroad company) at rates that are less than by the river, and coasting craft, taking insurance into calculation. This conforms to information in a letter by the last steamer, "that railways in England are everywhere depriving the canals of a great part of their business, and even much of the coasting trade. It is understood the contract price is something less than two cents per ton per mile from Albany to Boston. Even two cents per ton per mile, taking into consideration the heavy grades of 83 feet to the mile over the Western railroad, limits the capacity of action to 80 tons the working, and to 100 tons the maximum load, with Winans' best 22 ton engines, and is a rate much lower in proportion than is charged for coal transported over the Reading railway, 1¼ cent per ton per mile: such, however, is the favorable location, and construction of this road, being on a level or descending line from the coal mines to the Schuylkill, that the regular working load is 500 tons each train with either Norris' or Baldwin & Whitney's engines of 16 to 18 tons. The latter class of locomotives have drawn 156 iron cars, containing 769 tons of 2240 each. The rate of transportation on the Reading railroad, therefore, is high, compared with the Western railroad of Massachusetts. These low rates, however, must not be the guide for charges on all other railways. Much depends on the quantity and the nature of the trade, with the class of gradients going to and from the seaboard. In the case of the Western railway, we presume the ascent to the summit, from tide water at Albany to Boston, is from twenty-five to thirty-three per cent. more favorable than from the Connecticut river west. There is no difficulty in the locomotive on the Reading railway taking up the ascending grades of 19 feet to the mile, all the empty cars, and all the freight required for the interior. This gives it superior advantages to any railway in the United States, and we mistake much, if this road, under eastern management, does not pay a greater dividend than any railway in the United States. We perceive that the Schuylkill canal, by its side, is in the course of "enlargement," a doubtful policy—taking into view the cost of the same—by our experience, to secure cheap transportation. In the latitude of Pennsylvania, a canal, compared with a railway, loses one year in three; in this State it is nearly one in two. This is a great item to take into consideration, where a steady coal trade, like that from the Schuylkill valley, is to be contended for. The railroad giving constant employment to the mines, while the canal, as observed, would cause them to lose about one year in three.

An important fact is stated by the last steamer; "all the late charters for railways granted by parliament, are accepted with avidity when they limit the charge for transportation to three-fourths of a penny sterling," or 1½ cent per ton per mile.

A great change is gradually taking place in public opinion in this country and in England, in favor of railways. The Western railway of Massachusetts has done much to establish the productiveness of a good railway "between desirable points;" and the next year's business in the coal trade over the Reading railroad, of say from 800,000 tons this year and 1,000,000 of tons calculated to be transported the next year, will satisfy the most skeptical of the superiority of the Reading railroad for cheap transportation over any canal that can be built. This must be self evident to any one who will examine the subject without prejudice in favor of canals, and with candor.

J. E. B.

ERIE CANAL ENLARGEMENT.

We republished, in our last number, from Hunt's Merchants' Magazine, an exceedingly interesting article in relation to our New York canals, and especially to the *enlargement of the Erie canal*, from the pen of JOHN B. JERVIS, Esq., civil engineer; and *accidentally* omitted to give the proper credit, or to acknowledge the source from whence it came.

We would not, intentionally, rob our neighbor HUNT of his valuable wares, even though he could, from his abundance, afford to spare us occasionally a portion, and still be overstocked with good things, not even though the article belonged more *appropriately* to our Journal, but by some mistake, perhaps, in consequence of the "*switch*" being out of place, it got on the *wrong track*. We have however done our best to place it on the right track again, and will merely say to the writer that our columns have always been, and still are open to him; and that we shall be careful hereafter to keep the *switch* in watchful hands, and use it too, if need be, on the resumption of measures which ought not to have been undertaken.

THE COAL TRADE.—SCHUYLKILL VALLEY.

Sent by railroad from Pottsville and Port Carbon—total tons	60,131·00
From Schuylkill Haven—total tons	105,517·08
From Port Clinton	520·18
Total	166,169·06

BY CANAL.

From Pottsville and Port Carbon—total.	31,044·11
From Schuylkill Haven—total	5,152·14
From Port Clinton—total	9,251·05
Total	9,251·05
Total by canal	45,448·13
Total by railroad	166,169·06
Total by railroad and canal	211,617·19

LEHIGH COAL TRADE.

Total shipments from Mauch Chunk. Lehigh coal and navigation co.		
Summit mines,	24463	
Room run do.,	7043	31506
Beaver Meadow railroad and coal co.,		10064
From Penn Haven—Hazleton coal co.,		9061
From Rock Port—Buck Mountain coal co.,		2969
		53,500

PINE GROVE COAL TRADE.—On Union canal railroad from 16 to 30th April—total tons 6546
On Swatara railroad—total tons 2959

WYOMING COAL TRADE—total 8049

WILKESBARRE COAL TRADE—total 11159

MINEHILL AND SCHUYLKILL HAVEN RAILROAD.—total tons 109,928·19

MOUNT CARBON RAILROAD—total tons 63,983

RAILWAY SYSTEM IN SCOTLAND.

We commenced the publication in our last, and complete in the present number, the able and interesting report of the railway branch of the board of trade, to the railway committee of the house of commons, upon the numerous applications for new railways, and branches to, or extensions of, railways now in use in Scotland. It speaks of some matters in which most of our readers have but little interest, and occupies more space than we could well afford to it, and do justice to other calls upon the Journal; yet we give it entire, and ask for it an attentive perusal, as it gives many important facts, and much useful information, which should be in the possession of the *people* of this country, who, more than any other people on earth, require the facilities of railroads for the transaction of their business.

The board of trade say that, with the exception of the eastern line from London to Edinburgh, the railway question for Scotland is yet an open one—therefore it is of the utmost importance that, in commencing a system which is likely to pervade the whole country, care should be taken, in locating the main or trunk lines, that the great through or main business shall pass over the shortest and most favorable route, and which may, at the same time, be accessible by lateral or branch roads for the principal cities and manufacturing towns in every direction.

The board appear to appreciate the value of an unbroken communication when passing through large towns or cities. Of so much importance, indeed, do they esteem this point, that they recommend leaving *Dundee* entirely out of the main line, and the construction of a branch road of 20¼ miles, at a cost of £200,000, mainly on account of the difficulty of passing *through* that town which is confined between a high hill on one side, and the river on the other. Possibly some of the members have had experience in being "cabbed," or "hacked," or "carted," from one railroad to another, in some of *our* cities, and are thus able to estimate fully the pleasure and profit of such excursions, and would therefore prevent others from participating in them.

It will be seen, on reading this report, that grades of 1 in 80, 1 in 50, and even 1 in 38 are spoken of as not being *serious* obstacles to a heavy business on good roads, with *locomotive* power. They say that, "not many years ago anything steeper than 1 in 200 was looked upon as a decidely objectionable feature in a line;" and that "the difference of expense in construction, between a line with first class radients, i.e. none steeper than 1 in 200, or second class, ranging up to 1 in 100, was frequently not less than £10,000, £20,000, or even £30,000 per mile! Whereas now it is found that locomotives may be constructed which will work successfully on grades of 60, or 100, or even 140 feet to the mile, as on the Lickey incline, on the Birmingham and Gloucester railway, which is 1 in 37½, or 142 feet to the mile, for two miles and three chains, which is worked by an engine constructed for the purpose without serious inconvenience to an extensive traffic." They say also that there "passes over the road between Oldham and Manchester, which has grades of 1 in 59, 1 in 48 and 1 in 27 for two miles, and 1 in 150 for the whole remaining distance of five miles, ten trains, each way, carrying on an average 1,200 passengers and 300 tons of goods per day at an average speed of 22 miles per hour;" and that the working of the North Union, Newcastle and Carlisle, and other lines, also affords proof that, with light trains, the effect of steep gradients, ranging from 1 in 100 to 1 in 50, or even higher inclination, may be worked under ordinary circumstances with perfect safety. The distribution of gradients is deemed quite an important matter, even more so, sometimes, than their absolute inclination. They say that a line of undulating character, with steep but short gradients, alternately rising and falling, may oftentimes be worked at as much advantage as one where the inclines, though less steep, are of greater continuance; and then on the other hand, where the inclination of the line is concentrated on one or two gradients of such length and severity that assistant power is required at any rate, it may be comparatively unimportant whether such gradients be a few feet more or less in the mile. In this way lines with gradients of 1 in 70 or 1 in 80 distributed over them in short lengths may be positively better lines, i.e. more susceptible of cheap and expeditious working, than others which have nothing steeper than 1 in 100 or 1 in 200. These views have been years ago often advanced by an able correspondent of this Journal, though they then met with less favor than longer experience seems to have accorded them. So with other opinions advanced in the Journal, at the time deemed visionary.

STEAMBOAT ARRANGEMENT ON LAKE ONTARIO.

We learn from the Oswego Whig, that the summer arrangements for travel and business on Lake Ontario have been completed, and that a daily line of steamboats will ply during the season between Ogdensburg and Lewiston, stopping at intermediate places, as follows:—

The boats forming the line are the Lady of the Lake, Capt. J. J. Taylor; the St. Lawrence, Capt. J. Van Cleve; the Rochester, Capt. N. H. Throop, and the new steamer Niagara, Capt. R. F. Child. Going downwards, a boat will leave Lewiston every day, (Sundays excepted,) at 3 o'clock, P. M.; Rochester at 10, P. M.; Oswego at 8, A. M.; Sacket's Harbor at 12, M., and Kingston at 4, P. M., arriving at Ogdensburgh in time for the daily boats for Montreal, which run in connection with this line. On the upward trip, a boat will leave Ogdensburgh every day, (Sundays excepted,) at 8 o'clock, A. M.; Kingston 5, P. M.; Sacket's Harbor 9, P. M.; Oswego 9, A. M., and Rochester at 6, P. M., and arrive at Lewiston at 4 o'clock, A. M., in time for the cars for Niagara Falls and Buffalo, and in time for the steamers leaving Buffalo at 9, A. M. A boat also leaves Lewiston for Toronto and Hamilton, immediately on the arrival of one of this line at Lewiston.—These boats also run in connection with the packet boats plying twice a day between Syracuse and Oswego, forming the pleasantest and cheapest route between Syracuse and lake Erie. The difference between the railroad and the lake route is stated thus:—

Railroad fare from Syracuse to Niagara Falls, (200 miles,)	$7 00
Board on the way,	1 00
Supper, breakfast, &c., at Buffalo	1 50
	$9 50
Fare from Syracuse by the lake route to Niagara including board, &c (196 miles,)	$5 50
Difference in favor of the lake route,	$4 00

The packet boats running between Oswego and Syracuse are new, commodious, and elegantly fitted up and furnished, and under the charge of capable and attentive captains, already well and extensively known. The steamers forming the line are of the first class, unsurpassed for speed, safety, and elegance of accommodation on the lakes. They are under charge of experienced, skilful, and well-tried commanders, attentive to their duties, and regardful of the safety and the comfort of passengers.

The grand and attractive scenery of the lake Ontario route, combined with its cheapness and opportunity for rest and comfort, afford to passengers going east and west a welcome and delightful change from the monotony of a railroad ride of 365 miles.

RAILROADS.

Hon. William Jackson recently made an interesting speech, at a meeting of the friends of a railroad from Worcester to Providence. Mr. Jackson has long been familiar with railroads, in the capacity of stockholder and director, and few men are more competent to enlighten the public upon the subject of railroads. His speech abounds with interesting facts and illustrations. He illustrated the facility and cheapness of rail road transportation as follows:—

"Every morning in the year except Sundays you may see an engine with a train of cars containing about 100 tons of merchandise, passing from Albany over the Berkshire mountains at the rate of 10 or 12 miles an hour, or 100 miles per day, stops included. One of your horses might carry 1200 lbs. over those mountains 25 miles per day. Divide the load of this engine by 1200 and you have the requisite number of horses for 25 miles in a day, say 167; and four times this number, or 668, could carry this load 100 miles in a day—and hence the iron horse is every day, fair or foul, doing the work of 668 of your horses. And he does the work with the aid of only four men;—yours, with four-horse teams, would require 167 men. The interest on the cost of such an engine, amount expended for its repairs, wages of the four men, with wood and oil, show the annual expense of maintaining this team to be about $11,000. Similar items in relation to your teams will show an annual aggregate expense of about $120,000."

With such facts before the mind, it is no matter of surprise that railroad transportation is cheap. Coal is transported 90 miles over the Reading, Pa., railroad, at a cost of 45 cents per ton, and it is expected that the expense will be reduced to 37 cents.

In regard to the estimates of passengers which will pass over a contemplated road, Mr. Jackson gives a good many interesting facts, showing that the actual always exceeds the estimated number of passengers. The estimated number of passengers between Boston and Lowell, before the Lowell road was built, was 37,440. The actual average number between those two cities alone, for the last six years, without including those brought to the Lowell road by other roads, has been over 100,000. The estimate for the Worcester road was 23,500 Before the opening of the Western and Norwich roads the number reached 78,000.—The original estimate of the eastern road was 121,700. The number now exceeds 500,000. The estimate for the Fitchburg was 71,791. The first half year of running about half the road, nearly 10,000 more passengers were carried than were estimated for the whole road a whole year.

The increase of passengers on all our railroads, said Mr. Jackson, has surprised every body, and yet there is no necromancy or mystery about it to any one who has been in a position where all the elements which are working to produce this result are in sight. His own experience and example, he observed, would perhaps afford as good an illustration as any other. He was seven and a half miles from Boston, and carried on a manufacturing busines of the same kind and about a similar extent for twenty years.—Before there was a railroad, he went to the city once a week with a horse and chaise, and spent a day about it. Instead of an hour's hard work for himself and horse, he now went in twenty-two minutes—could stay half an hour, one hour, or more, and return when ready, without the loss of five minutes. Hence, he now went every day, and sometimes twice a day. The same is the case with multitudes.

Mr. Jackson presented another fact, which is the most important to the capitalist, viz., the value of railroad stock as an investment. All northern railroads pay good dividends, but the Stonington, Norwich and Housatonic. In reference to two of these roads, Mr. J. remarks, that they "are competitors for the same business. Either, without the other, would be good property; together, they afford a practical illustration of the folly of two charters for the same business, with a view of cheapening transportation, by the encouragement of competition between two railroads. If they act as competitors, they destroy each other. By a division of the proceeds, as is now the case between these roads, they are only doomed to half pay, and the public to high charges forever, which a single road, doing all the business, could afford to reduce greatly." All southern roads are also poor property, as none pass through territory sufficiently populous to support them.

The length, cost, and market value of the New England railroads, which stand well at the stock board, are presented in a tabular form, as follows:—

	Length miles.	Capital.	Dividend per ct.	Price, for 100 pd in.
Portland,	50	1,200,000	6	101
Concord,	35	750,000	12	141
Maine,	56	1,300,000	6	111
Bost. & Prov.,	42	1,900,000	6	110
Bost. & Wor.,	44	2,900,000	7	118
Eastern,	54	2,400,000	6	110
Fitchburg,	49	1,000,000	—	122
Nashua & Lowell,	15	380,000	8	125
New Bedford,	21	420,000	6	102
Taunton.	11	250,000	8	117
Western,	156	8,000,000	6	104
Total capital,		$20,000,000		
Average dividend,			7¼	

Another important fact was stated. The increase in the amount of the valuation in Boston, for eleven years preceding the opening of railroads, was 25½ millions of dollars; for the eleven subsequent years, it was more than 41½ millions—and this, too, in spite of two severe pecuniary revulsions in the latter period. Mr. Jackson said it was the opinion of many shrewd men in Boston, that the gain of property in the city, attributable solely to the instrumentality of railroads, amounts to more than the entire cost of these roads.

We copy the above from the Hampshire Gazette, for the purpose of saying that we *fully concur* in the above opinions, and have not a doubt of their entire accuracy. We have often said, and now repeat, that the *city* of *New York* would, in *ten years*, be the gainer by building the *New York and Erie*, and the *New York and Albany* railroads, by a tax upon its real estate, even if it never received a dollar in the way of dividends; but if properly constructed and managed, they would, in addition to the enhanced value which they would give to property, yield from $1,000,000 to $2,000,000 net revenue within *ten* years after their completion, and thus pay all *necessary* taxes of our city government.

IMPROVED RAILROAD CARS.

We have had occasion more than once to speak in terms of commendation of the *Iron Truck Frame* and superior passenger cars, built by Messrs. Davenport & Bridges, of Cambridgeport, near Boston, now in use on several of our principal railroads—and especially on the Long Island road. An easy, spacious and well *ventilated* car is of much greater importance to the success of a railroad than the companies seem to imagine. Who that has once rode in such a car would not willingly pay an extra price rather than to be confined in a "box," as is the case on some railroads, where they are endeavoring to "wear out their old cars" before they avail themselves of the improvements of the age.

We give in another page, a description, with engravings, of the "improved iron truck frame," above alluded to, and shall give in our next, and succeeding numbers, different views of the cars made by Messrs. D. & B., both external and internal, and also of their improved freight car; in the hope that they may be more generally used—especially on long lines.

THE IRON TRADE.

We have received by the steamer *Britannia* the English Railway and Mining Journals to 3d inst. We find in the Mining Journal of April 19th, the following remarks upon the Iron trade, viz:—

"Although the ironmasters at Wolverhampton, and the preceding quarterly meetings, had evinced such readiness to advance the price of their metal, and, even in the face of a quotation already high to an extent without a parallel, had ventured to increase it, the public looked with much confidence to the last and decisive meeting at Dudley, expecting a modification, if not an important reduction, in the prices previously fixed on; these anticipations have not, however, been realised. At the quarterly meeting at Dudley, last Saturday evening, the ironmasters confirmed the prices agreed on at Wolverhampton, and which, as the determinate figure for the metal now, may be quoted as follows:—Bars, £12; common nail rods, £12; rails, £14; hoops, £13; plates, £14; sheets, £14; pigs, (Shropshire,) £6 10s.; pigs, (Staffordshire,) £6 10s. This decision to maintain the advance fixed on a fortnight since, is justified by various concurrent circumstances. The abundance of orders, the full engagement of the different works, the extraordinary advance in coal and limestone, and the corresponding increase in the wages of the miners, all warranted the confirmation of the previously arranged quotation. Still, we are far from considering it either wise or beneficial;—

while in many cases it is but nominal—in others it is, there is no doubt, positively prejudicial."

From this it appears that there was a determination to persist in demanding these high rates. We find, however, in the same journal, of the 26th April, the following remarks, viz.—

"We have, for the past several weeks, recorded the rise in price of iron, while we have, in common with many others, considered it too rapid to be permanent. When we reflect that pig iron was selling in the Clyde at 35s. per ton, which is now quoted at £5 10s. to £6—that bars were sold at £4 5s., now quoted at £10 to £11, it may very well be imagined, that the ironmasters must be doing a good 'trade' at present prices, if they could 'live' before. But it appears, from the course taken within the past few days by some of the principal parties interested in the 'trade,' that, in their opinion, the price is too high, and hence their determination to reduce the price of bars, which we are informed on good authority, has been settled at 40s. per ton, with the intention of a further reduction, so as to put a stop to the excessive prices, wages, and, further, the rivalry which is naturally expected from new works being established, and old works resumed. Our impression is, that the demand for iron, although it may cover the next two or three years, is not such as to warrant the advance in price, and that some folks will, if they mind not, 'burn their fingers.' Some of the Welsh ironmasters are progressing at a railroad pace—they can afford to do so with present prices; but let them take care that they do not destroy themselves."

The Journal of 3d inst. has the following, which shows that the contemplated reduction had been made by at least a portion of the trade.

"A meeting of some of the most influential Staffordshire ironmasters was held on Thursday last, at Birmingham, when it was resolved to take off the last advance of £2 per ton upon manufactured iron, which, it will be remembered, we referred to in our remarks of last week."

It seems, however, that speculators have got hold of the trade, and there is no telling what may be the result, unless the manufacturers keep the control in their own hands.

"The iron market is much firmer in Scotch pigs, the speculators again turning their attention to it; 85s. has been paid within the past week for 10,000 tons, and there are few sellers now under 87s. 6d., though we are aware of an offer being made of 1000 tons Scotch pig at 80s., which, being under some risks, was even declined by the party—the terms were subsequently accepted by another less cautious trader."

The number of passengers who passed through the Thames tunnel in the week ending April 12, was 23,921; amount of money, 99*l.* 13*s.* 5*d.*, (last year, 199*l.* 18*s.*)

The Worcester Palladium says that "the subscriptions in this town to the stock of the Worcester and Nashua railroad had reached last week to over $100,000."

RAILWAYS IN SCOTLAND.

(Continued from page 325.)

These circumstances induce us to hesitate in recommending the rejection of lines proposed to open out new districts in Scotland, where the local advantage will be considerable, and where substantial parties are ready to undertake them; although we may feel doubts, looking at the existing amount of traffic, as to its sufficiency to yield a fair return on the required capital.

In such cases, we think it better to direct the attention of the committee on the bill for authorizing the undertaking, specially to the point of estimates and traffic.

Subject to this reservation, we have to report our opinion, that there are no public grounds why the Edinburgh and Hawick line should not receive the sanction of the legislature.

The Cumnock branch of the Glasgow and Ayr company, which runs in the same direction as the Glasgow, Dumfries and Carlisle line, for 18 miles from Kilmarnock, does not appear either to be necessarily involved in the fate of that undertaking. It will open up a rich mineral field, and afford local accommodation to a cousiderable district in Ayrshire; and as the Glasgow and Ayr company are desirous of undertaking it as a feeder to their exis ing line, we are aware of no public reasons why it should not be sanctioned.

We now come to the remaining schemes north of the Forth and Clyde; viz. the Aberdeen, the Scottish Midland, the Dundee and Perth, and the Edinburgh and Northern.

We have already stated our opinion that the Scottish Central line to Perth must be assumed as the basis of a system of railway communication for the northern portion of Scotland.

It is equally clear that the Aberdeen line is a proper and necessary part of such a system. Aberdeen is a town of 64,000 inhabitants, the seat of considerable trade and manufactures, and the centre of an important district.

The population along the line, including

Stonehaven, -	3,012
Brechin, - -	7,560
Montrose, -	15,093
Forfar, - -	9,620
Arbroath, - -	8,707

in connection with Dundee, Perth, Edinburgh, Glasgow, and England to the south, also appears sufficient to justify and support an extension of railway communication in this direction, where it is ascertained that a line of cheap construction and with favorable gradients can be found; nor does there appear to be any reason why such a line might not afford, as well as the Dundee and Arbroath, and Arbroath and Forfar lines, a moderate return on the capital invested. At the same time, it is obviously desirable to avoid unnecessary expense; and with this view, the termination of the Aberdeen line at Friockheim, which by rendering the Arbroath and Forfar railway available, saves the construction of 5¼ miles of main railway, and four miles of branches, appears justifiable, although a slight shortening of distance in the main line, to the south might be attained by taking the line, as has been suggested, straight to Forfar. By this latter combination, however, not only would increased expense be incurred, but the distance of the town of Montrose from the main line would be increased, and all the traffic of that town, and of places to the north of it, with Arbroath, and with the large and important town of Dundee, would be diverted over a considerable additional length of railway. The Aberdeen line, therefore, appears to us to be well laid out, with a view to the objects which it has to attain. The importance of this line is increased, by the consideration that a cheap and easy line, traversing a district of considerable population and local traffic, is stated to have been surveyed from Aberdeen to Inverness. Should this be the case, it seems not improbable that railway communication to the more northern counties may be extended in this direction.

On the whole, therefore we have to report our opinion, that we are not aware of any public grounds why the Aberdeen line should not be sanctioned.

Assuming the sanction of this as the northern, and of the Scottish Central and Caledonian as the southern links of a great trunk line of communication for Scotland. the question of supplying the intermediate link rests between the Scottish Midland and the Dundee and Perth, in connection with the existing Dundee and Arbroath, and Arbroath and Forfar lines. By the former the connection between Perth and the Aberdeen railway, is effected in 38 miles, by the latter in 44; 7½ miles of the Arbroath and Forfar line being common to each combination.

Had the question simply been, whether under existing circumstances, and with the existing prospects of traffic upon the northern lines, it was better to take a circuit of six miles, for the purpose of placing the towns of Arbroath and Dundee in the main line, and rendering the existing Dundee and Arbroath line available, or to shorten the trunk line by this distance, by going through Strathmore to Perth, we should have been inclined to prefer the former alternative.—But it appears that the advantage of an unbroken locomotive communication cannot be afforded by the Dundee route, which is interrupted by two gaps, first in the town of Dundee, and secondly in Arbroath.

The termini of the Dundee and Perth, and Dundee and Arbroath railways are more than half a mile apart; and the only connection proposed to be made is, by laying down rails along some of the principal quays and streets of Dundee, over which a limited number of carriages and wagons may be hauled by horse power. Even this arrangement will be subject to the control of the harbor commissioners, who have a power se-

cured to them by the act of the Dundee and Arbroath railway company, of buying up about three-quarters of a mile of this railway, including its terminus, in order to meet the contingency of the space being required for the accommodation of the increasing trade of the port, or for additional dock room.

In the town of Arbroath a similar interruption exists, and the traffic passing from the one railway to the other is drawn by horses over rails laid down in the streets.

The interruption at Arbroath might probably be avoided by effecting a junction of the two lines outside the town, at a moderate expense; but at Dundee, owing to the peculiar situation of the town, which is confined between a steep hill and the river, there seems no possibility of effecting a proper junction, unless at an expense so heavy as to render it very unlikely that it will be undertaken.

The existence of this interruption seems to us conclusive against the alternative of selecting the Dundee route as the sole line of through communication from the north of Scotland to the south; when by the Scottish Midland or Strathmore line we are offered a communication 5¼ miles shorter in actual distance, without interruption, and with excellent gradients. The difference in point of time between this and the Dundee route for the transmission of mails and quick trains must necessarily be considerable; and this great line of communication could not properly be made to depend on the exercise, on the part of the harbor commissioners of Dundee, of a discretion guided by circumcumstances referable to the trade of that port

The Scottish Midland line appears thus to be necessary as an integral portion of the northern line of communication, and it moreover will afford great accommodation to a district of considerable resources, and capable of much improvement; while, being of remarkably easy construction, and likely to be worked economically in connection with other lines, it appears to hold out a fair prospect of remuneration. This, however, is a point upon which, as in the case before referred to, we must content ourselves with directing the particular attention of the committee on the bill to the estimates laid before them.

The construction of the Scottish Midland would render the Dundee and Perth line unnecessary as part of the through line from the north to Perth. But looking at the importance of the town of Dundee, which, as the seat of extensive linen manufactures, is much connected with Glasgow, Liverpool and other commercial and manufacturing towns in England, it appears to us very desirable that it should enjoy a connection with the general railway system of the kingdom; and as this connection can be effected by a line of 20¼ miles, the estimated cost of which is only £200,000, and which will moreover be the means of introducing coals at a cheaper rate into Dundee, and of accommodating a considerable local traffic between that town and Perth, we cannot hesitate to report our opinion that, notwithstanding the sanction of the Scottish Midland as the preferable line for through communication to the north, the construction of the Dundee and Perth line appears to us, upon public grounds, to be justifiable.

In considering this line, we have assumed that it is to follow the alternative line on the north bank of the Tay, and not as originally proposed, to cross that river by a bridge;—such bridge having been objected to by the lords commissioners of the admiralty, after investigation by an engineer appointed by them for the purpose as calculated to interfere injuriously with the navigation.

For the same reason in considering the Edinburg and Northern line, we equally assume that it is to run to Perth, without affecting a junction lower down, by means of this proposed bridge, with the Dundee and Perth line.

We have already stated our opinion that for the purposes of a through line of communication, this line, owing to the interruption of the ferry, cannot be placed in competition with the Scottish Central. Considered, however, simply as a local line, it is calculated to afford great accommodation to the County of Fife, and also by opening up the coal fields of that county to the adjoining counties, and to the towns of Perth and Dundee. The advantage to the latter town will be somewhat diminished by the increased distance rendered necessary by the circuit by Perth, in order to avoid interference with the navigation of the Tay. Still the advantage, from the introduction of coals at a cheaper rate, will be considerable; and having reference more particularly to this, we do not feel ourselves justified in reporting unfavorably of the undertaking, unless fully convinced that it holds out no reasonable probability of being a solvent commercial undertaking. This we do not feel to be the case, if the railway be constructed, as is proposed, with a single line of rails, and as cheaply as possible; although we beg to direct the attention of the committee on the bill particularly to the estimates, both of cost and of traffic. With this reservation we have to report that we are aware of no public grounds why the scheme should not be sanctioned.

The two remaining schemes—the Glasgow, Barrhead and Neilston direct; and Glasgow and Ayr, Barrhead and Neilston branch—have reference to a local question of competition for the accommodation of a manufacturing district in the vicinity of Glasgow. This district, comprising Pollockshaws, Thornliebank, Barrhead, Neilston, and other manufacturing villages, is evidently of sufficient importance to justify the extension to it of railway communication; and the sole question is between the independent scheme proposed for that purpose, and the branch proposed by the Glasgow and Ayr company from their existing line.

The former is more direct, giving a shorter communication to Glasgow by two miles upon a total distance of nine miles.

It also accommodates more places, and a larger population; is more favorably situated for extension; and is supported by a great majority of the local interests concerned, which are opposed to the Glasgow and Ayr baanch.

The only point in which this branch appears preferable to the direct line is, that it affords a shorter communication towards Paisley; but as the principal traffic of the district is with Glasgow, and as the distance from Barrhead to Paisley is very circuitous, being eight miles by railway, while it is only three by the turnpike road, this advantage does not seem of much weight.

It has been objected to the direct line, that it is too short to be worked with economy, and to support the expense of an independent establishment and station in Glasgow: and, as a general rule, it is certainly true that lines of this short length are worked more advantageously as branches in connection with existing lines; but in the present instance, this objection is obviated by an agreement with the Glasgow and Greenock railway company to work the line, and to provide accommodation at their own station in Glasgow.

It appears to us, therefore, that as the direct line offers such superior advantages, this is not a case in which the Glasgow and Ayr company can fairly claim to be allowed the privilege of extending a branch from their existing line; and we have, therefore to report, that of the two competing schemes, the Glasgow, Barrhead and Neilston direct appears to us to be preferable.

With reference both to this line and to the proposed Clydesdale Junction railway, we beg to direct the attention of the committee on the bills, to the crossing of the turnpike road from Glasgow to Paisley on a level, by a portion of the Pollock and Govan railway, over which some part of the traffic of the lines in question may pass.

A level crossing over a road of this importance, at a point where it forms one of the principal outlets, and in point of fact may almost be considered as one of the public streets of Glasgow, is evidently objectionable, whatever restrictions may be introduced against the use of locomotive engines, or for regulating the passing of wagons; but the amount of inconvenience, and the proper mode of applying a remedy, are questions which depend so much upon detailed evidence as to local circumstances, that we may abstain from expressing any decided opinion respecting them.

The only other projected lines in Scotland are certain short branches proposed by the Edinburgh and Glasgow railway company:

1. A branch, three furlongs in length, to connect the Edinburgh and Glasgow railway with the Monkland and Kirkintilloch.

2. A branch five miles in length, to the village of Campsie.

3. A branch two furlongs in length, to afford access to additional station room in Glasgow.

We are not aware of any objections to these branches on public grounds.

Fig. 1.

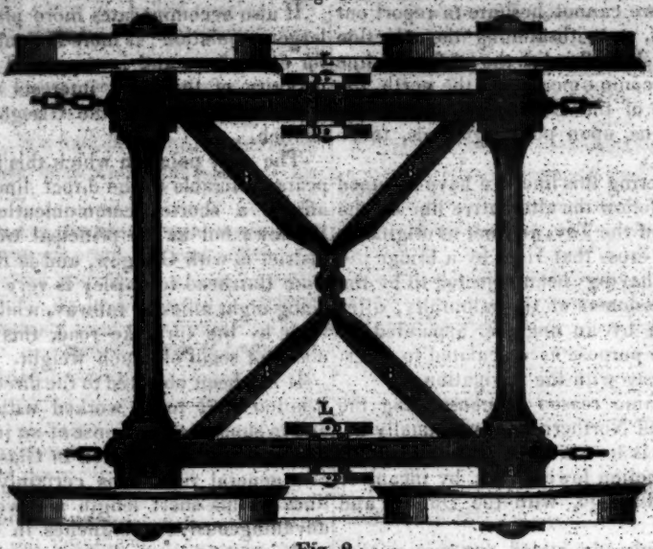
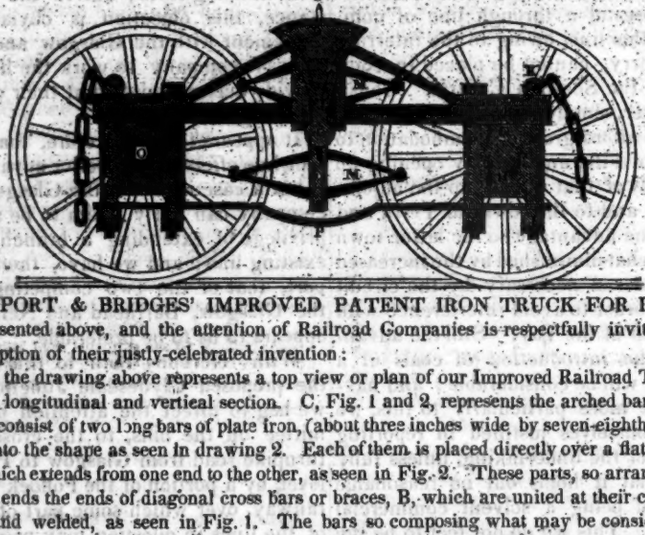


Fig. 2.



DAVENPORT & BRIDGES' IMPROVED PATENT IRON TRUCK FOR RAILROAD CARS, is presented above, and the attention of Railroad Companies is respectfully invited to the following description of their justly-celebrated invention:

Fig. 1 of the drawing above represents a top view or plan of our Improved Railroad Truck. Fig. 2 is a central, longitudinal and vertical section. C, Fig. 1 and 2, represents the arched bars of the side trusses; they consist of two long bars of plate iron, (about three inches wide by seven-eighths of an inch thick,) bent into the shape as seen in drawing 2. Each of them is placed directly over a flat and straight tie bar, A, which extends from one end to the other, as seen in Fig. 2. These parts, so arranged, receive between their ends the ends of diagonal cross bars or braces, B, which are united at their centres by being clasped and welded, as seen in Fig. 1. The bars so composing what may be considered as side trusses and diagonal cross braces, rest at their ends upon four pedestals, F, F, which receive the bearings or boxes for the axles to run on. Another flat tie bar, P, extends from the under side of one of the pedestals to that of the other, on the same side of the frame, and the whole is secured together by eight bolts, J, J, passing down through the ends of the several bars, A, B, C, and the pedestals, and on each side of the journals of the axles, O, O, in the positions represented in the drawings. From the above it will be seen that there are two bolts to each pedestal, and that this number is all that is requisite for the full security of the bars and pedestals together. The body rests and moves upon two sectional supports, D D, arranged on the sides of the truss frames, as seen in Fig. 2; they extend somewhat, or a sufficient distance above the truss frames, and are jointed at their lower ends by means of a bolt, L, which rests upon the top of the lower spring, M, which spring rests upon a bolt passing through the lower part of the inverted strap, E, which strap passes over and rests upon the top part of the upper spring, M, which is placed within the truss frame, and rests upon the top of the bar, A.

Two bands, N, N, are passed entirely around the central part of each truss frame, the object of the same being to transfer the strain, or a portion thereof, of the spring, from the tie bar, A, to the arched bar, C.

These Trucks are adapted as well for eight-wheeled passenger cars as for baggage and freight cars, giving to each a more agreeable and easy motion than any other Truck heretofore constructed or in use. They are simple in their construction, combining strength and great durability, although weighing at least twelve hundred pounds less than the common Trucks. Besides these excellences, by reason of the elasticity of the braces, B, B, B, B, as seen in the drawing, and the other peculiarities of construction, the weight is *equalized* upon all the wheels, and yet any one may be raised so as to pass any inequality on the rails without lifting either of the other wheels from the track, thus rendering it almost impossible to run a car off. Being bound, and having as it were but four joinings, they are protected from injury by lateral strains, and in case of damage are easily repaired.

These excellences have been fully tested by use, for a long time, on the Eastern, the Fitchburg and Long Island railroads; and for proof of the above stated superiority of these Trucks over all others, we refer to the experience of those who have used and run them.

CAMBRIDGEPORT, April 1, 1845. DAVENPORT & BRIDGES.

MINERAL RESOURCES OF PENNSYLVANIA.

With a territorial domain of 47,000 square miles, this, the keystone of the States, has richer native resources than any other state in the Union: its population in 1684 only 7000, was in 1840 nearly 2,000,000; its agricultural products exhibit a corresponding increase: it yields abundantly both anthracite and bituminous coal. In 1820 only 365 tons of anthracite were sent to market, in 1830 the quantity reached 174,737 tons, in 1840 it was 865,414, and in 1844, 1,631,699—showing that the trade has nearly doubled within four years. The region where bituminous coal abounds, embraces 21,000 square miles, and at least 2,000,000 tons are annually mined in the state. Iron is very abundant in the state; also, marble, limestone, zinc, copper and lead.

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee. G. A. NICOLLS.

ja15 *Reading, Pa.*

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1¼ in. to 2½ in thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wro't. Iron Engine and Truck Frames; Railroad Jack Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wro't. Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective Iron and Brass Castings of all descriptions.

ja451y

FOR SALE, AT A SACRIFICE—A LOCOmotive Engine, 4 wheels and Tender. Cylinders 10 in. dia., Stroke 16 in., Cylinders inside of smoke box. Weight of engine, with wood and water, about 9 tons. This engine and tender are new, and of the best materials and workmanship. If required, would be altered to a 6 wheeled engine.

Also, 1 20-horse High Pressure Steam Engine.
2 8-horse " " "
1 Upright Hydraulic Press.

All of which will be sold low, on application to
T. W. & R. C. SMITH,
Founders and Machinists,
May 12tf Alexandria, D. C.

RAILROAD IRON AND FIXTURES. THE Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.

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ja45 21 Broad st., N. York.

NEW JERSEY RAILROAD AND TRANSPORTATION COMPANY.

Length of Road, 33 96-100 miles. Capital, $2,000,000.
JOHN S. DARCY, Esq., President. ROBERT SCHUYLER, Esq., Vice President.
J. P. JACKSON, Esq., Secretary. J. WORTHINGTON, Esq., Treasurer.

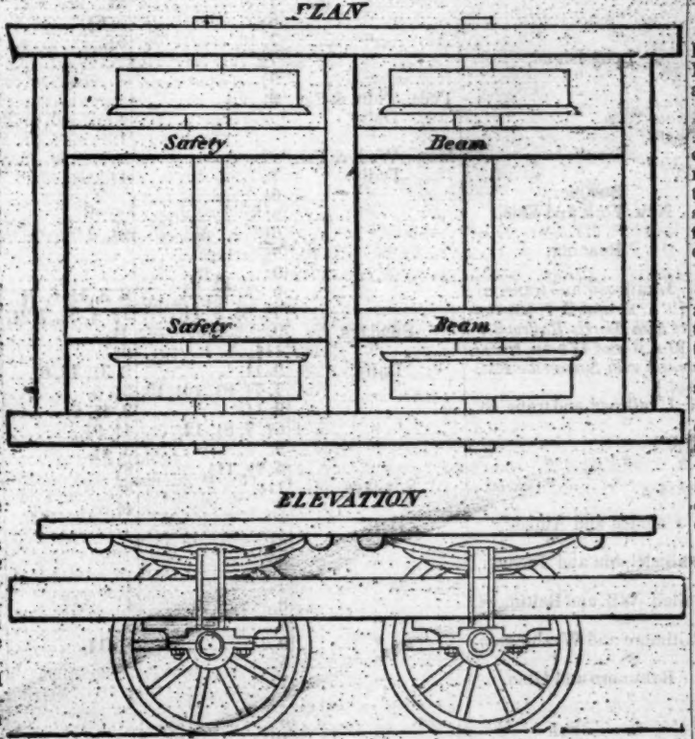
Leave New York, foot of Courtland street,	DAILY. A. M.	DAILY. P. M.	SUNDAY. A. M.	SUNDAY. P. M.
For Newark	9, 11, 12	2, 3, 4 3-4, 6, 7 1-2	9	4 3-4
" Elizabethtown	9, 11	2, 3, 4 3-4, 6		
" Rahway	9, 11	3, 4 3-4, 6		
" New Brunswick	9	3, 4 3-4		
Leave New Brunswick	6, 7 1-2, 11 1-2	8 3-4	11 1-2	8 1-2
Rahway	6 3-4, 7, 8 1-4, 12	4 3-4, 9 1-4		
Elizabethtown	7, 7 1-2, 8 1-2, 10 1-2, 12	3 1-2, 5		
Newark	7 1-2, 8 1-4, 9, 11	1 1-2, 4, 5 1-2, 7, 9 3-4	11 3-4	9 3-4
For New York.				

9 A. M. and 3 P. M. to meet the Morris and Essex trains, and 9 A. M. and 4 3-4 P. M. to meet the Somerville train, and for Philadelphia.

TABLE OF DISTANCES AND FARES.

	New York. Miles.	New York. Cents.	Newark. Miles.	Newark. Cents.	Elizabethtown. Miles.	Elizabethtown. Cents.	Rahway. Miles.	Rahway. Cents.	N. Brunswick Miles.	N. Brunswick Cents.
New York			9 1-4	25	14 1-2	31 1-4	19 3-4	31 1-4	31 1-2	50
Newark	9 1-4	25			5 1-2	12 1-2	10 1-2	25	22 1-2	50
Elizabethtown	14 1-2	31 1-4	5 1-2	12 1-2			5	12 1-2	16 3-4	50
Rahway	19 3-4	31 1-4	10 1-2	25	5	12 1-2			11 3-4	37 1-2
New Brunswick	31 1-2	50	22 1-2	50	16 3-4	50	11 3-4	37 1-2		

KITE'S PATENT SAFETY BEAM.



MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.

☞ The undersigned takes pleasure in attesting to the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the country.

JOHN FRAZER, Agent, JAMES ELLIOTT, Sup. Motive Power,
GEORGE CRAIG, Superintendant, W. L. ASHMEAD, Agent.

☞ A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York. ja45

W. R. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys, estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description, with plans and specifications. He will also act as agent for the sale or purchase of machinery, and of patent rights for improvements relating to public works.

SAMUEL NOTT, CIVIL ENGINEER, SURveyor and General Agent, Bangor, Me. Railroads, Common Roads, Canal, Factory and Mill Sites, Towns, Farms, Wild Land, etc., surveyed. Plans and Estimates for Buildings, Bridges, etc., prepared, and all appertaining business executed.

— REFERENCES. —
Boston, { Col. James F. Baldwin, Civil Engineer. / Col. J. M. Fessenden, " "
Wm. Parker, Esq., Engineer and Superintendent Boston and Worcester railroad. ja45

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*
Albany Iron and Nail Works, Troy, N. Y.
The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston.

MACHINE WORKS OF ROGERS, KETCHum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works beingexten sive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.
Railroad Work.
Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.
Cotton, Wool and Flax Machinery
of all descriptions and of the most improved patterns, style and workmanship.
Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.
ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.
Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.
All orders directed to the Agent, Troy, N. York, will be punctually attended to.
HENRY BURDEN, *Agent.*
Spikes are kept for sale, at Factory Prices, by J. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 252 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.
, Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand. ja45

TRAINS LEAVE	FOR	BY RAILROAD	DAYS.	A. M.	P. M.	MILES.	FARE.
Boston	Portland	Eastern,	Daily,	7½,	2½,	106	$3 00
"	Portsmouth	"	"	7½,	2½, 4½,	54	2 00
"	Newburyport	"	"	7½,	2½, 4½,	35	1 25
"	Salem	"	"	7½, 9, 11½,	2½, 3½, 4½, 6,	14	50
"	Portland	Boston and Maine,	"	7½,	2½,	109	3 00
Portland	Boston	"	"	7½,	3,	109	3 00
Boston	Lowell	Boston and Lowell,	"	7, 11,	2, 5,	26	75
Lowell	Boston	"	"	7½, 11,	2, 4½, 5½,	26	75
Boston	Concord	Concord,	"		3½,	76	2 00
Concord	Boston	"	"		3½,	76	2 00
Boston	Nashua	Nashua and Lowell,	"	7, 11,	5,	41	.....
Nashua	Boston	"	"	6½,	1½, 5,	41	.....
Boston	Worcester	Boston and Worcester,	"	7, 9,	2½,	44	1 25
Worcester	Boston	"	"	7, 10,	6,	44	1 25
"	"	"	Sundays,	7,		.....	.....
"	Worcester	"	"		2,	.....	.....
Boston	New York via Norwich	"	Mon., Wed. & Fri.,		4,	.....	.....
"	" " L. Island railroad	"	Tues., Thur. & Sat.,	7,		.....	.....
"	" " New Haven	"	Daily,	9,	2½,	.....	.....
"	Albany	Western,	"	9,	2½,	200	6 00
Albany	Boston	"	"	8½,	1½,	200	6 00
Springfield	Boston and Albany	"	"	7,	3,	.....	.....
Boston	New York via New Haven	"	"		2½,	.....	.....
Charlestown	West Acton	Fitchburg,	"	8,	1, 4½,	.....	.....
West Acton	Charlestown	"	"	7½, 10½,	5,	.....	.....
Boston	New York, via Steamboat trains	Boston and Stonington,	Tues., Thur. & Sat.,		4½,	.....	.....
"	" " " "	Boston and Newport,	Mon., Wed. & Fri.,		4½,	.....	.....
"	Providence	"	Daily,	7½,	4,	41	1 50
Providence	Boston	"	"	On arrival of the	mail,	41	1 50
Taunton	"	"	"	8,	4,	.....	.....
New Bedford	Boston	"	"	7½,	2½,	.....	.....
Boston	Dedham	"	"	8½,	3, 6½,	.....	.....
Dedham	Boston	"	"	7, 10,	5½,	.....	.....
New York	Greenport	Long Island,	"	7½,		95	2 25
Brooklyn	Hicksville & intermediate places	"	"	9½,		26	56¼
"	Greenport " "	"	Tues., Thur. & Sat.,	9½,		95	2 25
"	Hicksville, (Saturd'y to Suffolk)	"	Daily,		4,	26	56¼
Greenport	Brooklyn, (Boston train)	"	"		1,	95	2 25
"	" (accommodation do.)	"	Mon., Wed. & Fri.,			95	2 25
Hicksville	" & intermediate places	"	Daily,	7,	1½,	26	56¼
New York	Albany & Boston via N. Haven	Steamer,	"	6½,		.....	5 00
"	Middletown	New York and Erie,	"	8, 3,		53	.....
Middletown	New York	"	"	6½,	3½,	53	.....
Philadelphia	Pottsville	Reading,	"	9,		94	3 50
Pottsville	Philadelphia	"	"	9,		94	3 50
New York	Newark	N. J. railroad and trans. co.,	"	9, 11, 12,	2, 3, 4½, 6, 7½,	9¼	25
Newark	New York	[9 A. M. *and* 3 P. M., *connect with Morris Railroad.*]	"	7½, 8½, 9, 11,	1½, 4, 5½, 7, 9½,	9¼	25
"	"		Sundays,	9,	4½,	9¼	25
New York	Newark	[9 A. M. *and* 4½ P. M., *trains, connect with Somerville Railroad.*]	"	11½,	9½,	9¼	25
"	Elizabethtown		Daily,	9, 11,	2, 3½, 4½, 6,	14½	31¼
Elizabethtown	New York		"	7, 7½, 8½, 10½, 12,	3½, 5,	14½	31¼
New York	Rahway	N. J. railroad and trans. co.,	"	9, 11,	3, 4½, 6,	19¾	31¼
Rahway	New York	"	"	6¾, 7, 8½, 12,	4½, 9½,	19¾	31¼
New York	New Brunswick	"	"	9,	3, 4½,	31¼	50
New Brunswick	New York	"	"	6, 7½, 11½,	8½,	31¼	50
"	"	"	Sundays,	11½,	8½,	31¼	50
New York	New Brunswick	"	"	9,	4½,	31¼	50
Philadelphia	New York	Camden and Amboy,	Daily,	7,		91	3 00
New York	Philadelphia	"	"	5½,		91	3 00
Philadelphia	Bristol	Philadelphia and Trenton,	"	9,		30	75
Bristol	Philadelphia	"	"		4,	30	75
Philadelphia	Baltimore	Philad. Wil. and Baltimore,	"	8,	4,	93	.....
Baltimore	Philadelphia	"	"	9,	8,	93	.....
"	Washington	Baltimore and Washington,	"	9,	5, 11½,	41	2 50
Washington	Baltimore	"	"	6,	5½,	41	2 50
Baltimore	Cumberland and inter. places	Baltimore and Ohio,	"	7½,		.....	.....
"	Frederick " "	"	"		4,	.....	.....
Cumberland	Baltimore	"	"	8,		.....	.....
Hancock	"	"	"	10½,		.....	.....
Martinsburg	"	"	"	11½,		.....	.....
Harper's Ferry	"	"	"		12½,	.....	.....
Frederick	"	"	"		2,	.....	.....
"	"	"	Sundays,	8,		.....	.....
Ellicott's Mills	"	"	Daily,	7½, 12,	4½,	.....	.....
Richmond	Petersburg	Richmond and Petersburg,	"	10½,	1½,	.....	.....
Petersburg	Richmond	"	"	5½,		.....	.....
Albany	Schenectady	Mohawk and Hudson,	"	8,	5½,	.....	.....
Schenectady	Albany	"	"	9,	3½,	.....	.....
Albany	Saratoga	"	"	7½,	2,	.....	.....
Saratoga	Albany	"	"	7,	12½, 5,	.....	.....
Troy	Saratoga	Troy and Saratoga,	"		3½,	.....	.....
Saratoga	Troy	"	"	7½,		.....	.....
Auburn	Rochester	Auburn and Rochester,	"	8½,		.....	.....
Rochester	Auburn	"	"	8,	3,	.....	.....
"	Buffalo	Rochester and Buffalo,	"		3,	.....	.....
Buffalo	Rochester	"	"			.....	.....
"	Falls	Buffalo and Falls,	"	9,		.....	.....
Falls	Buffalo	"	"		1½,	.....	.....
Buffalo	Albany	Albany and Buffalo	"	8½,		.....	.....

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